

Appn. No. 10/806,535

Attorney Docket No. 10543-070

I. Amendments to the Specification

Please replace paragraph [0022] on page 8 with the following amended paragraph:

[0022] The specific details and mathematics of the control module 30, and in particular the estimator 34, will not be described herein, but may be found in copending Application No. [[XX/XXX,XXX]] 10/807,088 (Attorney Docket No. 10543-069) filed concurrently with the present application, the disclosure of which is incorporated herein by reference in its entirety. Suffice it to say that the estimator 34 draws from a model of the vehicle dynamics 38 which includes a number of equations to represent the dynamic behavior of the vehicle. Similarly, equations are provided which constitute a model of the sensors 40. Based on detected accelerations from the array of sensors 20 (which are transformed by the signal adjuster 32) the estimator 34 is able to utilize the models 38, 40 to solve for and estimate the state vector of the vehicle. Once the roll angle, roll rate, yaw rate and lateral velocity of the vehicle are known (i.e. the state vector) additional variables may be solved for utilizing the models 38, 40, such as the roll acceleration. It should also be noted that the estimator 34 may employ a closed loop control system 35 which utilizes the estimate of the state vector and an iterative process to reduce the estimation error to an acceptable level. Further, the array of sensors 20 may also include angular rate sensors which preferably would be mounted offset from the vehicle reference axes, while the model of the sensors 40 would reflect this sensor.

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